

ANALYST:		VPDES NO.	
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Parameter: Total Suspended Solids
Method: Gravimetric, 103-105° C
1/08

METHOD OF ANALYSIS:

	18th Edition of Standard Methods 2540 D
	21 st or On-Line Edition of Standard Methods 2540 D (97)

TSS is a method-defined analyte so modifications are not allowed. [40 CFR Part 136.6]		Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for <u>each analyst/operator</u> performing this analysis? NOTE: Analyze 4 samples of known TSS with each sample having appropriate % recovery. [SM 1020 B.1]		
2)	Is glass fiber filter a Whatman grade 934AH, Pall Type A/E, Millipore Type AP40, Scientific Specialties grade 161, Environmental Express Pro Weigh, or equivalent? [2]		
3)	Is a desiccator, drying oven operating at 103-105°C, analytical balance, filtration apparatus, and suction flask available and in operable condition? [2]		
4)	Does desiccator have active color-indicating desiccant? [2]		
5)	Is the analytical balance capable of weighing to 0.1 mg? [2]		
6)	To prepare the filter is it washed under vacuum, with 3 successive 20-mL portions of reagent-grade water? [3.a]		
7)	Is washed filter dried in oven at 103-105°C for at least 1 hour, cooled in desiccator, and weighed? Is drying-cooling-weighing cycle repeated until a constant dry weight is obtained or until weight change is less than 4% of previous weight or 0.5 mg, whichever is less? NOTE: See question 19. (MUST DOCUMENT) [3.a]		
8)	After drying, is filter, Gooch crucible and/or weighing dish stored in desiccator until needed and then reweighed before use? [3.a]		
9)	Is filter or Gooch crucible handled with forceps or tongs? [Permit]		
10)	Is sample well-mixed prior to filtration: [3.c]		
11)	Is sample volume measured using Class-A graduated cylinder? [SM 1070 B.2]		
12)	Is filter seated with reagent-grade water prior to filtering sample? [3.c]		
13)	Is sample filtered under vacuum? [3.c]		
14)	Is sample filtration time limited to 10 minutes? Documentation is required. [3.b]		
15)	After sample is filtered, is filter washed with 3 successive 10 mL portions of reagent-grade water? [3.c]		
16)	Is filter, Gooch crucible and/or weighing dish dried for at least one hour at 103-105°C and is drying time documented? [3.c]		
17)	Is filter, Gooch crucible and/or weighing dish desiccated until it reaches room temperature prior to weighing it? [3.c]		
18)	Is drying-cooling-weighing cycle repeated until a constant dry weight is obtained or until weight change is less than 4% of previous weight or 0.5 mg, whichever is less? Documentation is required. [3.c]		

		Y	N
19)	If sufficient drying time is cited is it checked periodically? (VPDES permit holders conducting their testing must verify the adequacy of drying time with a documented drying-cooling-weighing cycle once per year for each outfall. Commercial or centralized laboratories must maintain records for each client/outfall documenting drying time adequacy with a drying-cooling-weighing cycle. This may also be applied to filter preparation. These records must be updated annually.) [Permit]		
20)	Is filter yield between 10 and 200 mg (18 th) or 2.5 and 200 mg (21 st), or is at least 1000mLs of sample filtered? [3.b]		
21)	Is the TSS of the sample calculated correctly? [4] $\text{TSS (mg/L)} = \frac{(A - B) \times 1000 \text{ mL/L}}{\text{sample volume (mL)}}$ <p>A = weight of filter + dried residue (mg) B = weight of filter (mg)</p>		
22)	Is a duplicate sample analyzed after every 20 samples if citing 18 th or 19 th Edition [1020 B.6] or after every 10 samples for 20 th or 21 st Edition [2540 D.3.c]?		
23)	Do the results of the duplicate samples agree within 5% of their average? [3.c]		

PROBLEMS: